

REMARKS

Re-examination and allowance of the above-captioned application is respectfully requested.

Initially, Applicants note that the Examiner objects to the disclosure as failing to provide a proper antecedent basis for the subject matter of claim 5. While Applicants disagree with the Examiner's assertion, Applicants herewith cancel, without prejudice, claim 5 in order to advance the prosecution of the present application. However, Applicants expressly reserve the right to submit a similar type claim in another application. In view of the cancellation of claim 5, the Examiner is respectfully requested to withdraw the objection to the disclosure.

The Examiner also objects to claims 1-5, 10 and 18 as containing minor informalities. By the current amendment, Applicants amend these claims, paying particular attention to the concerns raised by the Examiner. Accordingly, Applicants respectfully request that the Examiner withdraw the objection to claims 1-5, 10 and 18.

Applicants respectfully traverse the Examiner's 35 U.S.C. §112, first paragraph rejection of claims 11, 12, 15 and 16. According to the Examiner, it is unclear what is meant by the phrase "code system", and how a signal can be represented by a code system. Applicants notes that support for this feature may be found, for example, on page 79 of Applicant's specification, in which it is noted that signals to be quantized

are divided into a plurality of quantization steps, each quantization step being assigned an output code specific to the quantization step. By the current amendment, Applicants amend claim 11 to employ language corresponding to that found in the specification, by indicating that the signal processor converts the non-linear signal into a signal represented by a code related to at least one characteristic of the received signal.. In view of this revision, Applicants submit that the ground for the rejection no longer exists, and respectfully request that it be withdrawn.

Applicants respectfully traverse the Examiner's 35 U.S.C. §102(b) rejection of claims 1-5 and 18-20 as being anticipated over U.S. Patent 5,375,255 to BAIER et al.

According to a feature of the present invention, discussed at, for example, pages 16-19 of Applicant's specification, a distortion corrector includes a distortion estimator that estimates a distortion in a received signal to output a correcting signal based on an inverse distortion characteristic of the received signal, and a distortion compensator that utilizes the correcting signal to remove the non-linear distortion from the received signal.

Applicants submit that at least this feature is not disclosed or suggested by the applied art of record. BAIER et al. discloses equalizing a received signal in order to remove a distortion introduced by dynamic compression in an amplifier. Applicants submit that BAIER et al.

corresponds to the description provided at, for example, pages 9-11 of Applicant's specification, which distinguishes over such an equalization process, by focusing instead on the non-linear processing of instantaneous signals. BAIER et al. does not disclose/suggest performing a quadrature demodulation processing operation on the processed received signal to output an in-phase signal and a quadrature signal, and a distortion corrector that corrects a non-linear distortion of the processed received signal, in which the distortion corrector comprises a distortion estimator and plural distortion compensators, the in-phase signal and the quadrature signal being input to the distortion estimator and a respective distortion compensator of the plural distortion compensators, so that the distortion estimator estimates a distortion component in the processed received signal to generate a correcting signal that is indicative of an inverse characteristic of the processed received signal, and the correcting signal being utilized by the plural distortion compensators to remove the non-linear distortion from the in-phase signal and the quadrature signal.

By the current amendment, Applicants amend independent claims 1 and 19 to clarify the above-described feature. Applicants submit that independent claims 1 and 19, along with their respective dependent claims, are now in condition for allowance, as at least this feature is lacking from the applied art of record. Accordingly, the Examiner is respectfully

requested to withdraw the 35 U.S.C. §102 rejection, and to indicate the allowability of claims 1, 3, 4 and 18-20.

Applicants also respectfully traverse the Examiner's 35 U.S.C. §102 rejection of claims 13 and 17 as being anticipated by U.S. Patent 4,800,574 to TANAKA et al.

According to another feature of the invention, discussed, for example, at pages 76-82 of Applicants' specification, a distortion converter comprises a non-linear quantized signal input to a linear compensator to determine a correcting signal that is indicative of an inverse characteristic of the non-linear quantized signal. The correcting signal is utilized by the linear compensator to convert the non-linear quantized signal to the linear signal. Applicants submit that at least this feature is lacking from TANAKA et al.

TANAKA et al. discloses a non-linear analog-to-digital converter with circuitry to compensate for the non-linearity of the converter by an expanding process. Specifically, CPU 500 expands one byte of signal supplied by D/A converter 512 to ten and several bits of signal having linear levels and transfers the resulting two bytes to a digital signal processor 502. This differs from Applicant's invention, which does not require expanding the data.

By the current amendment, Applicants amend independent claim 13 to clarify the above-noted feature. In view of this amendment, Applicants

submit that the ground for the 35 U.S.C. §102 rejection of claims 13 and 17 no longer exist. Accordingly, the Examiner is respectfully requested to withdraw this ground of rejection.

Further, Applicants submit that the ground for the 35 U.S.C. §103 rejection of claims 8-10 and 14 no longer exist in view of the amendment to claim 13. In particular, Applicants submit that even if one attempted to combine the teachings of TANAKA et al. and BAIER et al. in the manner suggested by the Examiner, one would fail to arrive at the present invention, as defined by the amended claims. Accordingly, the Examiner is respectfully requested to withdraw this ground of rejection.

Pursuant to M.P.E.P. §714.13, Applicants contend that entry of the present amendment is appropriate because the proposed amended claims avoid the rejections set forth in the last Office Action, resulting in the application being placed in condition for allowance, or, alternatively, the revised claims place the application in better condition for purposes of appeal. Further, the revised claims do not present any new issues that would require any further consideration or search by the Examiner, and the amendment does not present any additional claims for the Examiner's consideration. Accordingly, entry of the present amendment is respectfully requested.

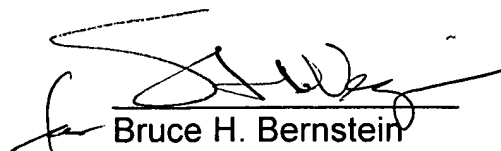
SUMMARY AND CONCLUSION

In view of the fact that none of the art of record, whether considered alone or in combination, discloses or suggests the present invention as now defined by the pending claims, and in further view of the above amendments and remarks, reconsideration of the Examiner's action and allowance of the present application are respectfully requested and are believed to be appropriate.

Should an extension of time be necessary to maintain the pendency of this application, including any extensions of time required to place the application in condition for allowance by an Examiner's Amendment, the Commissioner is hereby authorized to charge any additional fee to Deposit Account No. 19-0089.

If there should be any questions concerning this application, the Examiner is requested to contact the undersigned at the telephone number listed below.

Respectfully Submitted,
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